

REMARKS

The present filing is responsive to the Office Action.

Information Disclosure Statement

Applicant submitted an Information Disclosure Statement on August 10, 2007. However, the Examiner did not indicate consideration of the references cited in such Statement. Applicant submitted a further Information Disclosure Statement on even date. Applicant respectfully requests the Examiner indicating in the records that the references cited in both Statements have been duly considered.

Summary of the Response

No claim has been amended. Claims 1-20 remain pending in this application. Reexamination and reconsideration of the present application as amended are respectfully requested.

Claim Rejections Under 35 USC 103

Claims 1-3, 8-13 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. (US 6,577,360) in view of Onishi et al. (US 5,814,378). Claims 4-5, 7, 14-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. in view of Onishi et al. , further in view of Kubo et al. (US Patent No. 6,124,919). Claims 6, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. in view of Onishi

et al. and Kubo et al., further in view of Maruyama et al. (US 2002/0093612). These rejections are respectfully traversed.

Independent claim 1, 11 and 20 recite the retardation of said liquid crystal layer being in the range of 500-750 nm. The Examiner conceded in the present action that Akiyama does not disclose the retardation of said liquid crystal layer is in the range of 500-750nm.

The Examiner then relied on the newly cited reference Onishi to render such range obvious. Applicant respectfully submits it would not have been obvious to combine Akiyama and Onishi, with respect to the recited retardation range of 500-750 nm recited in amended claims 1, 11 and 20. The Examiner conceded to the absence of the recited retardation range in Akiyama. Applicant respectfully submits that Onishi does not make up for the deficiencies of Akiyama.

Akiyama is directed to a liquid crystal display having various layers of films for achieving certain optical effects, including an absorption-type polarizing film and a reflection-type polarizing film in connection with a liquid crystal layer. Onishi instead is directed to a polymerizable compound for liquid crystal displays. The optical properties of the various layers in Akiyama are specifically chosen, with the specified retardation ranges for the liquid crystal layer and other optical properties of the other layers, to work in an integrated and coordinated fashion, in order to match the phase of transmitted and reflected light. Onishi on the other hand did not discuss optical films (e.g., compensation film, polarization film, etc.) that work in conjunction with the inventive polymerizable compound of the liquid crystals to achieve a desired optical effect. While Onishi discloses certain retardation ranges for its novel polymerizable compound for its liquid crystal layer, it would be unreasonable for the Examiner to simply modify the retardation value of a particular layer (namely the liquid crystal layer) in

Akiyama and randomly apply the retardation value of the Onishi liquid crystal layer to the Akiyama device. There is no indication anywhere in Akiyama and/or Onishi that it would be desirable to implement a liquid crystal layer having retardation range of 500-700 nm, in combination with the other layers in Akiyama. Akiyama specifically excluded a retardation film in its device, but the choice of retardation value of its liquid crystal layer which works with the other optical layers in its device have not been disclosed. Simply substituting into Akiyama the retardation value of the liquid crystal layer in Kubo would be hindsight reconstruction, given the disclosure of the present invention.

As noted in the specification of the present invention at page 5, lines 9-14: "Furthermore, the liquid crystal layer 2 is chosen to have a retardation of about 500-750 nm. It is noted that this retardation interval is lower than for prior art FSTN and conventional STN LCD, which have a retardation within the interval of 760-860nm. Hence the inventive display may be referred to as a low retardation LCD. By using a low retardation liquid crystal layer together with the proposed front optical stack, the use of compensation films may be avoided." This shows that the display device is quite sensitive to the retardation value of the liquid crystal layer (e.g., 500-750 nm for the present invention, compared to the prior art of 760-860 nm). The recited retardation value range would not have been predictable or expected results to a person skilled in the art, because simply substituting the retardation value for the liquid crystal layer without consideration of the additional layers would not be reasonable. Therefore, it would not have been obvious to modify Akiyama with Onishi, because the results of the combination would not have been predictable or expected, without additional disclosure found only in the present invention.

The Examiner commented that "it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art". Applicant respectfully submits that this is not the case here. In the present case, the claims recite limitations beyond general conditions. For example, claim 1 recites the combination of a liquid crystal layer having the specific recited range of retardation, a reflective film, and a front optical stack comprising essentially of a polarizer and an optical light scattering film. Claims 11 and 20 further recite the absence of a compensation film in the front optical stack. The claimed combination is contrasted from aggregations of unrelated components. The claimed combination requires more than just optimizing the workable ranges. The claimed combination requires creative and inventive considerations of the optical interactions of the combination of optical components. The mere fact that the Examiner cites Onishi in an attempt to provide the missing teaching in Akiyama is an indication that the claimed invention involves more than mere optimization of workable ranges of retardation for the liquid crystal layer. Otherwise, the Examiner should not even need to rely on Onishi.

The Examiner further commented that "it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the retardation of the liquid crystal layer of the retardation of said liquid crystal layer being in the range of 500-750 nm with the teaching of Onishi et al. because such modification would achieve a brighter display". Such statement is flawed for various reasons. Firstly, the Examiner did not point to another retardation range as a reference to conclude the effect of a brighter display. As such, the Examiner appears to have arbitrarily and indiscriminately point to a perceived advantage. Secondly, the Examiner only considered the optical effect of the liquid crystal layer in isolation from the other recited optical layers. With the Examiner's approach, one would have concluded that a retardation of 100-300

nm in the liquid crystal layer would provide an even brighter display. But a low retardation liquid crystal layer taken alone does not make a display. There are other optical layers that work in conjunction with the liquid crystal layer, in an integrated, coordinated manner, of which optical interactions should be taken into consideration. The Examiner cannot and should not ignore such considerations by considering a single component within the recited claim in an isolated manner.

Accordingly, it would not have been obvious to modify Akiyama with Onishi in the manner proposed only by the Examiner, to render the claims obvious.

The other cited references do not make up for the deficiencies of Akiyama and Onishi.

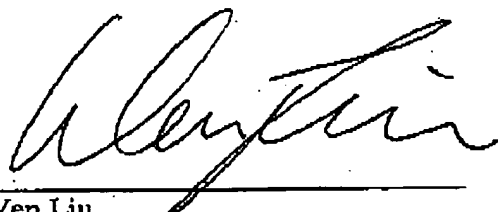
Accordingly, the obviousness rejections based on combination of Akiyama and Onishi, or further in combination with the other cited references should be withdrawn.

CONCLUSION

In view of all the foregoing, Applicant submits that the claims pending in this application are patentable over the references of record and are in condition for allowance. Such action at an early date is earnestly solicited. **The Examiner is invited to call the undersigned representative to discuss any outstanding issues that may not have been adequately addressed in this response.**

The Assistant Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this transmittal and associated documents, or to credit any overpayment to **Deposit Account No. 501288** referencing the attorney docket number of this application.

Respectfully submitted,



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